

A logic identifying isomorphic propositions

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► **To cite this version:**

Alejandro Díaz-Caro, Gilles Dowek. A logic identifying isomorphic propositions. There is a mistake in the main proof (strong normalisation), and the system is actually not normal.. 2018. <hal-01109104v5>

HAL Id: hal-01109104

<https://hal.inria.fr/hal-01109104v5>

Submitted on 27 Aug 2018

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The paper has been withdrawn since we have found an error in the proof of strong normalisation and a counter-example for such a property:

Let

$$\begin{aligned}
 y &: \tau \\
 z &: \tau \Rightarrow \tau \Rightarrow \tau \\
 \delta &= \lambda x^\tau. \pi_{\tau \Rightarrow \tau}((zy) \times x)x : \tau \Rightarrow \tau \\
 \Omega &= \delta(\delta y)
 \end{aligned}$$

Then

$$\begin{aligned}
 \Omega &\hookrightarrow \pi_{\tau \Rightarrow \tau}((zy) \times (\delta y))(\delta y) \\
 &\hookrightarrow \pi_{\tau \Rightarrow \tau}((z \times \delta)y)(\delta y) \\
 &\hookrightarrow \pi_{\tau \Rightarrow \tau \Rightarrow \tau}(z \times \delta)y(\delta y) \\
 &\hookrightarrow \pi_{\tau \Rightarrow \tau \Rightarrow \tau}(z \times \delta)(\delta y)y \\
 &\hookrightarrow \pi_{\tau \Rightarrow \tau}((z \times \delta)(\delta y))y \\
 &\hookrightarrow \pi_{\tau \Rightarrow \tau}((z(\delta y) \times \Omega)y)
 \end{aligned}$$